

## CLAIMS:

1. A method for developing a family of complex systems having a common software architecture platform, the method comprising
- set up of a functional requirements specification which includes use cases that describes interaction of users with said complex systems in terms of abstract concepts
- 5 – set up of a requirements object model which explains the abstract concepts in terms of a structured vocabulary

wherein

- the use cases are developed hand-in-hand with the requirements object model.

- 10 2. A method as claimed in Claim 1, wherein

- the functional requirements specification includes one or more chapters and one or more FRS authoring teams are established for separate chapters
  - a single object model control team control internal consistency of the requirement object model
- 15 – one or more overlapping modeling teams are formed where each modeling team includes members of the object model control team together with one or more members of respective FRS authoring teams,
  - which overlapping modeling teams for their chapters construct use cases and provide respective portions of the structured vocabulary.

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3. A method as claimed in Claim 1, wherein differences between members of the family are expressed in the requirements object model, notably using one or more of the following mechanisms:

- Different members of the family using different subclasses of a generalised class,
- 25 – Different members of the family using different multiplicities in relationships between classes,
- Different members of the family using different values for an attribute of a class.

4. A method as claimed in Claim 2, wherein

- in at least one of the modeling teams an initial model is constructed and
- the FRS authoring of the use cases is performed on the basis of the initial model and
- fine tuning of the use cases is performed by the object model control team.

5 5. A method as claimed in Claim 2, wherein

- FRS authoring of the use cases of several chapters is carried out in parallel by the respective FRS authoring teams.

10 6. A method as claimed in Claim 1, wherein the complex systems are medical diagnostic imaging systems, notably, diagnostic x-ray examination systems.

7. A family of complex systems, notably a family of medical imaging systems,
- separate complex systems supporting respective, different subsets of use cases.

15 8. A method as claimed in Claim 1a, where the precise behaviour of one or more use cases differs among members of the family according to variations expressed in the object model, notably by different subclasses of a general class, by different multiplicities of relationships, or by different values of attributes.